FINAL ENVIRONMENTAL ASSESSMENT

BAYOU MANCHAC SECTION 208

ASCENSION PARISH, LOUISIANA

EA # 304

INTRODUCTION

The U.S. Army Corps of Engineers (USACE), New Orleans District (NOD), has prepared this Environmental Assessment #304 (EA # 304) to evaluate the potential impacts associated with proposed flood protection efforts. The proposed action is located along Bayou Manchac from Alligator Bayou to the Amite River, Ascension, and East Baton Rouge parishes, Louisiana (see Figure 1). EA # 304 has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation, ER 200-2-2.

NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to reduce flooding in portions of Ascension and East Baton Rouge parishes. The request for the proposed action resulted from headwater flooding problems on Bayou Manchac when the Amite River is low. Most large flood events on Bayou Manchac are the result of backwater flooding from the Amite River. There are instances when the Amite River is low and flooding on Bayou Manchac occurs as a result of the obstructed condition of Bayou Manchac. Ascension Parish operates a control structure on Alligator Bayou (which flows into Bayou Manchac) to prevent backwater flooding from Bayou Manchac into areas that drain into Alligator Bayou. Since the clogged condition of Bayou Manchac is not conducive to evacuation of floodwater, additional flooding and a longer duration of flooding is experienced in the watershed.

AUTHORITY FOR THE PROPOSED ACTION

The proposed action was authorized by Section 208, of the 1954 Flood Control Act as amended (Clearing and Snagging).

PRIOR REPORTS

NOD has completed two reports on projects in the general area of the proposed project. They are: Amite River and Tributaries Reconnaissance Study, completed in 1984 that was a flood control study, and East Baton Rouge (EBR) Parish, LA Feasibility Study, completed in July 1995, which was a flood control study, for five watersheds in EBR Parish. Three studies are

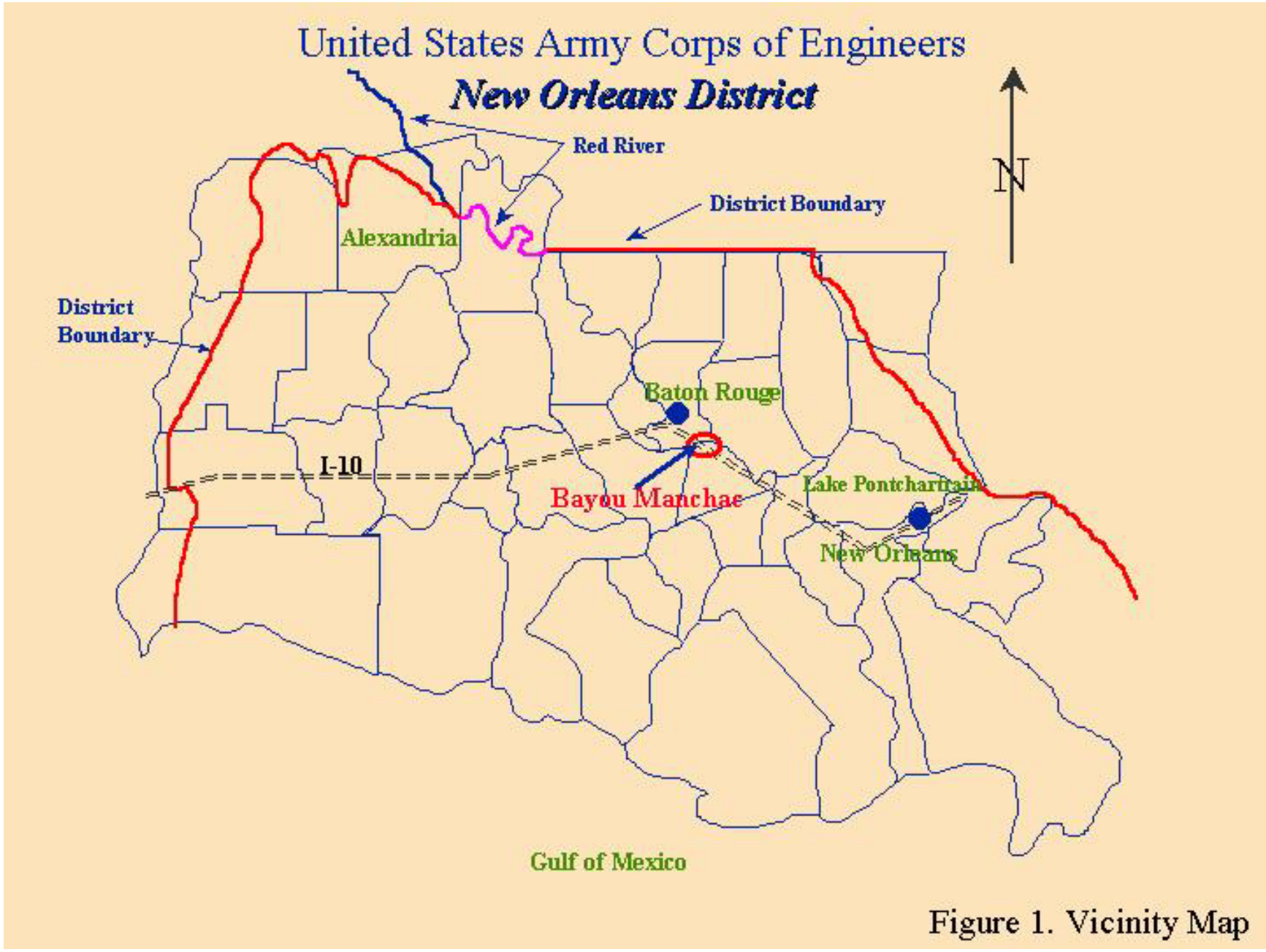

Figure 1. Vicinity Map

currently ongoing in the area. The New River Ecosystem Restoration Feasibility Study is a Section 1135 study under Continuing Authorities Program (CAP). The Bayou Braud, Spanish Lake, and Alligator Bayou, LA Ecosystem Restoration study is a Section 206 of CAP. The third study is the Amite River Ecosystem Restoration Reconnaissance Study.

PUBLIC CONCERNS

The primary public concern expressed by Ascension Parish has been flood damages from frequent rainfall events. Noise at the site of proposed action is low and is not disturbing to animals or human users of the area. The equipment used would produce noise levels in the 70 to 90 dBA range (50 feet from the source). These noises would dissipate with distance and should not result in adverse impacts to wildlife or humans. Property owners were concerned that the canopy along the bayou would be destroyed and water quality would be impacted. There was also a concern that the bayou would not be eligible for the Louisiana Natural, Scenic, and Historic Rivers program after the project was implemented.

DESCRIPTION OF THE PROPOSED ACTION

The project would consist of clearing and snagging Bayou Manchac beginning at Bayou Manchac's confluence with the Amite River and ending at or near the confluence of Alligator Bayou with Bayou Manchac (approx. 10 miles). Please refer to Figure 2, Site Map for additional details. The proposed action includes the use of a vegetation cutter mounted on a long reach excavator to clear and snag Bayou Manchac. The equipment is specially designed and operated to minimize damage to both in-stream and riparian habitat. The equipment would access the project area via the water on small work barges. Material, which is at or below the water surface, would be removed. Trees, shrubs, or other vegetation, which are either in the waterway impeding flow or determined to be imminently likely to fall, would be cut. General guidelines that would be used during construction phase are as follows. Any dead trees or vegetative debris in the waterway would be removed. Trees leaning into the waterway at an angle of greater than 45^{o} from vertical which are less than or equal to approximately 8 inches in diameter at breast height (dbh) would be removed. Trees larger than 8 inches in dbh with an intact root structure, even if leaning, would remain. Hardwood species with intact root structure (such as oak and pecan), even if leaning, would not be removed. No cypress trees would be removed. No upright trees would be removed. Stumps would remain in the bank. Isolated or single logs which are embedded, lodged, or rooted in the waterway and are unaffecting flow would remain. No man-made structures, including small piers or docks or remnants thereof, sunken boats, or other such structures would be removed as part of this work. Vegetative material removed from the waterway would be placed at access locations along the waterway for load-out. Material taken from the operation, would be trucked by the local sponsor to a designated landfill. Access for personnel and equipment would be located at existing utility crossings (i.e., pipeline and overhead electrical) to minimize flood plain disturbance. Note that this work would be in accordance with procedures and practices presented in the "Stream Obstruction Removal Guidelines", as developed by the Stream Renovation Guidelines Committee, a joint committee of The Wildlife Society and the American Fisheries Society, in cooperation with the International Association of Fish and Wildlife Agencies, 1983.

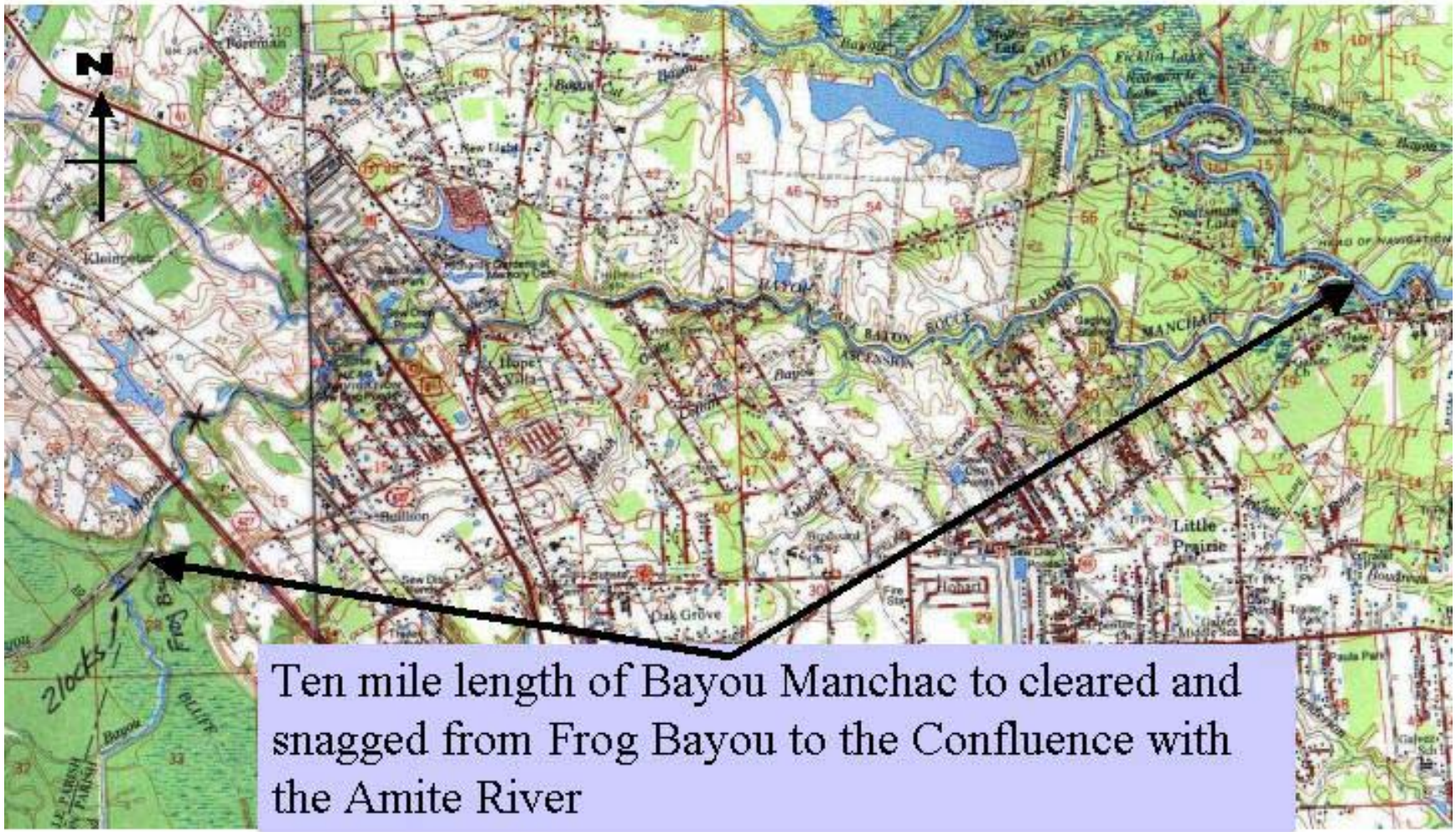

Figure 2. Site Map

ALTERNATIVES TO THE PROPOSED ACTION

Three alternatives to the proposed action were considered. These alternatives were: No-action, Non-structural alternatives, and Clearing and snagging by a dragline.

No-action. Under the no-action alternative, the proposed action would not be constructed by the NOD. Continued floods would occur along the banks of the bayou. Costs would be incurred by the locals to repair damages caused by this flooding.

Non-structural. Under this alternative, the abandonment, relocating, or raising of the existing buildings and/or the construction of replacement buildings would occur. This alternative would cost more than the limits of the Section 208 authority.

Clearing and snagging by a dragline. Under this alternative, heavy equipment (dragline) would be used on either the bank or a barge. Because of the depth of the bayou and the overhanging nature of the trees, the barge needed to carry the dragline would not fit in the channel. The use of the dragline from shore would require the removal of many trees along one side of the bayou.

ENVIRONMENTAL SETTING

GENERAL

The project is located along the Ascension Parish/East Baton Rouge Parish line in south central Louisiana. The project limits are along Bayou Manchac from Alligator Bayou to its confluence with the Amite River. Live oak trees and water oak trees line much of the area between the edges of the bayou.

CLIMATE

The climate is subtropical with average winter daily maximum and minimum temperatures of 65 ^{o}F and 43 ^{o}F, respectively, and summers averages of 91 ^{o}F and 71 ^{o}F, respectively. Major rainstorms in the study area are associated with tropical disturbances in summer and early fall, with frontal activity extratropical cyclones in late fall, winter, and spring. Convective thunderstorms produce intense but localized rain in late spring and summer. Total annual precipitation averages about 57 inches. The wettest month is July with a monthly average of 6.75 inches, while October is the driest with a monthly average of 2.8 inches.

GEOLOGY

The project site is located within the Gulf Coastal Plain Province. The province extends east to west from Georgia to Texas, and north to south from southern Illinois to the continental shelf of the Gulf of Mexico. The surface as well as the subsurface consists almost entirely of Pleistocene deposits on the Prairie terrace. These recent Holocene alluvial deposits are reworked

Pleistocene deposits and are found adjacent to and within Bayou Manchac. These deposits consist of silts, sands, and silty-sands. Pleistocene deposits consist of stiff to very stiff oxidized clays interbedded with layers and lenses of silts and sands. Soils in the area are composed of Ochlockonee fine sandy loam-overflow, Loring silt loam, Oliver silt loam, and Calhoun silt loam. The Ochlockonee fine sandy loam, overflow soil is on undulating slopes and in level or nearly level areas on the flood plain of Bayou Manchac. Groundwater levels are generally controlled by the river stage of the Amite River; however, there are some perched aquifers in the Pleistocene deposits.

SIGNIFICANT RESOURCES

This section contains a description of significant resources and the impacts of the proposed action on these resources. The significant resources described in this section are those recognized by: laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public.

BAYOU MANCHAC

Existing Conditions

This resource is institutionally significant because of the Clean Water Act of 1977, as amended and the Magnuson-Stevenson Act of 1996 (Essential Fish Habitat). Bayou Manchac is technically significant because it provides habitat for various species of wildlife, finfish, and shellfish. Bayou Manchac is publicly significant because of the desire of the public for recreational use of the bayou for boating, and bird watching.

Bayou Manchac is a riverine open-water habitat. Developed and undeveloped areas border the bayou. One golf course, and several pastures flank the bayou, while five bridges, and a number of pipelines cross the bayou. Numerous houses are located adjacent to the bayou and lawns and docks meet the edge of the bayou. Typically, overhanging trees shade the margins of the bayou. Much of the bayou is covered with duckweed and the shoreline areas (at depths of less than three feet) are covered with a mix of submerged, rooted, aquatic vegetation and duckweed. The bottom of the bayou is typically softer on the margins than in the center. The maximum channel depths range from 5-16 feet. Natural and man-made debris is common in the bayou and on the margins of the bayou. Much of the bottom is covered with woody debris and leaf litter.

Water quality within the project area was sampled by the Louisiana Department of Environmental Quality (2000). Water within the bayou does not meet the designated standards (http://www.deq.state.la.us/planning/305b/) for fish and wildlife propagation or primary and secondary contact recreation. Suspected sources of impairment include flow alteration, lead, mercury, metals, nitrogen, nutrients, oil and grease, organic enrichment/low DO, pathogens, phosphorus, siltation, suspended solids, and unionized Ammonia. The suspected sources of this

impairment are industrial point sources, municipal point sources, silviculture, logging road construction/maintenance, construction, land development, urban runoff/storm sewers, non-industrial permitted, land disposal, wastewater, onsite wastewater systems (septic tanks), septage disposal, hydromodification, flow regulation/modification, source unknown, and atmospheric deposition. According to the EPA's Index of Watershed Indicators, the Amite watershed which includes Bayou Manchac has a score of 6 (out of 6+) indicating a "More Serious Water Quality Problem–High Vulnerability" to stressors such as pollutant loadings.

Both backwater and headwater flooding occur on Bayou Manchac due to rainfall events. Most large flood events on Bayou Manchac are the result of backwater flooding from the Amite River. There are instances when the Amite River is low and flooding on Bayou Manchac occurs as a result of the obstructed condition of Bayou Manchac.

Future Conditions with No Action

Without implementation of the proposed action, there would be no significant direct or indirect impacts to the bayou. Additional snags and blockages would occur on Bayou Manchac. This condition is not conducive to evacuation of floodwater, which would cause additional flooding, with a longer duration of flooding in the watershed. Poor water quality conditions are likely to persist or increase with the flooding of homes and business in the area.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be short-term impacts to water quality due to temporary turbidity increases associated with the work. The amount of streamside clearing would not significantly alter the canopy; therefore, higher water temperatures and subsequent reduced dissolved oxygen levels would not result. Headwater flooding on Bayou Manchac would be reduced. These impacts would not be significant.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, there would be no significant direct or indirect impacts to the bayou. Poor water quality conditions are likely to persist. Additional snags and blockages would occur on Bayou Manchac. This condition is not conducive to evacuation of floodwater, which would cause additional flooding, with a longer duration of flooding in the watershed.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, one shoreline would have to be cleared. There would be an increased sedimentation rate due to erosion on that exposed shoreline. The water quality would be impacted due to increased turbidity, until revegetation occurred. With this increase in the amount of streamside clearing, there would be a further indirect impact in water quality due to higher water temperatures and subsequently reduced dissolved oxygen levels. Headwater flooding on Bayou Manchac would be reduced.

SOCIO-ECONOMICS

Existing Conditions

Structure Survey. In 1987, the Gulf South Research Corporation of Baton Rouge produced an inventory of structures located within the flood plain of the Amite River Basin for use in evaluating the economic benefits of damage reductions. Type, value, and first floor elevations were noted for each structure. In addition, ground elevation, type of foundation, number of stories, first floor square footage, type of construction, and the condition of the structure were recorded. This inventory was completed on July 1, 1987. It assumed that each residence had one automobile susceptible to damage. Most of the structures within the proposed Bayou Manchac project area fall within sub-basin 64 of the Amite River Basin (figure 3 and table 1). The inventory of total structures for this area consisted of 463 residential structures and 17 commercial structures. Structure values were updated to 2001 price levels using the Marshall & Swift Valuation Service for residential structures.

Future Conditions with No Action

Without implementation of the proposed action, there would be no significant direct or indirect impacts to the socio-economics of the area; however, frequent rainstorms would cause flood damage to vehicles and structures (tables 1 and 2) within the project area. Additional snags and blockages would occur on Bayou Manchac. This condition is not conducive to evacuation of floodwater, which would cause additional flooding, with a longer duration of flooding in the watershed.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be an overall decrease in damages to structures along the bayou. Data show that most of the damage reductions would stem from flood events occurring most frequently (events with frequencies of less then 10 years). For example, data show that in the case of reach 64B1 (Table 1 and Figure 3) the proposed clearing and snagging project would reduce flood stages occurring every 2 years from 10.8 feet to 8.77 feet. They indicate that the project would reduce average flood stages that occur every 5 years from 13.1 feet to 12.3 feet. Damages were calculated for single-family one-story and two-story homes; mobile homes; the contents of all residential structures; one automobile associated with each residential structure; commercial structures; and the contents of commercial structures for each reach and for both with- and without-project conditions. The hydraulic analysis appears to demonstrate that 18 structures have shifted from the 2-5 frequency category to the 5-10 frequency category with the proposed action (Table 2).

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, there would be no significant direct or indirect impacts to the socio-economics of the area. Additional snags and blockages would occur on Bayou Manchac. This condition is not conducive to evacuation of floodwater,

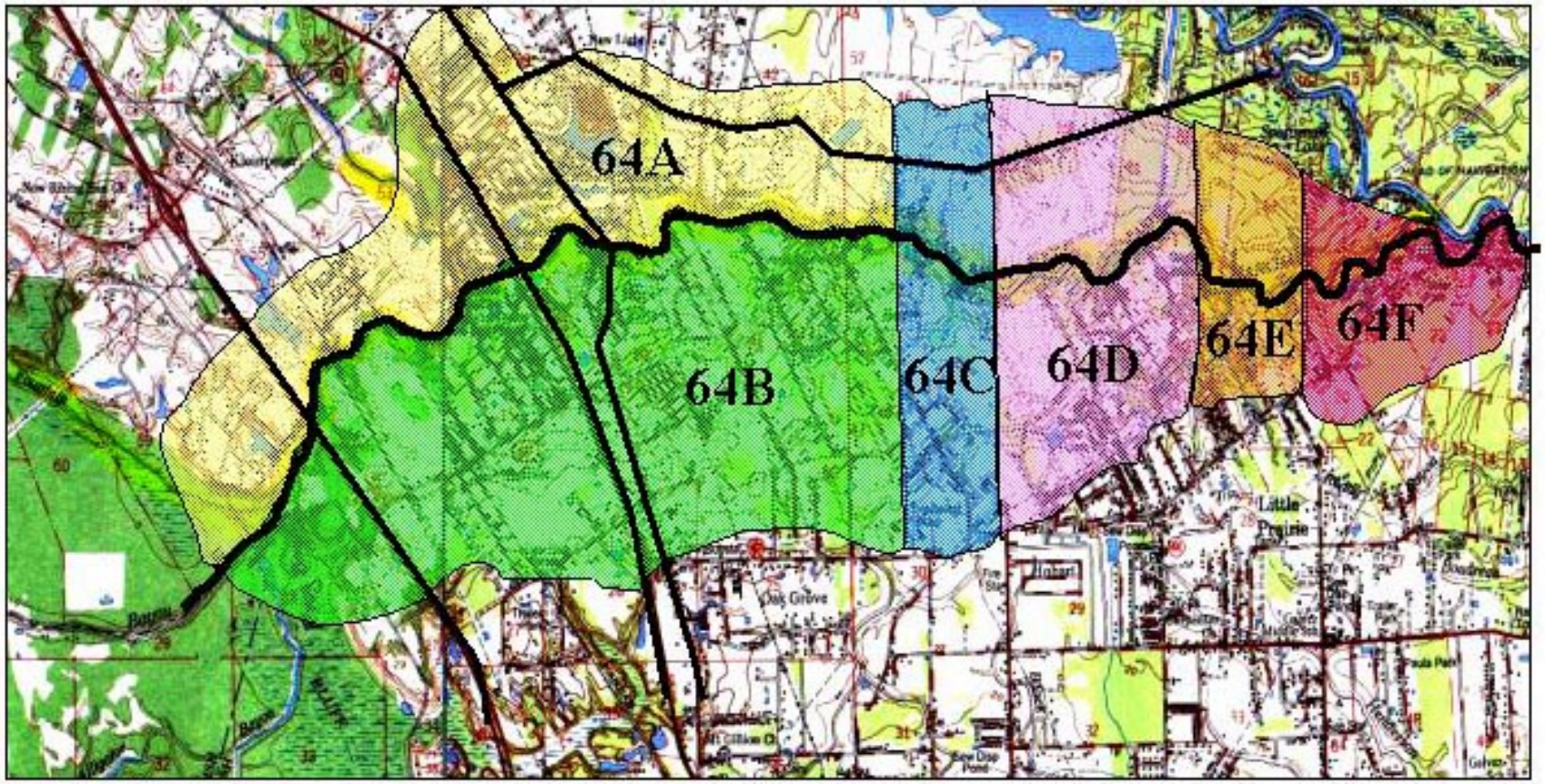

Figure 3: Reaches of sub-basin 64 of the Amite River Basin

Table 1: Bayou Manchac Clearing and Snagging Project Flood Stages NGVD for Sub-Area 64 (feet)*

Frequency By Event	Reach 64A		Reach 64B1		Reach 64B2		Reach 64B3		Reach 64C		Reach 64D		Reach 64F	
	W/out	With	W/out	With	W/out	With	W/out	With	W/out	With	W/out	With	W/out	With
Year 1	8.6	7.1	8.8	7.0	8.65	7.3	8.95	7.35	9.2	7.5	9.45	7.5	9.45	7.6
Year 2	10.8	8.75	10.8	8.77	10.8	8.7	10.8	8.73	10.8	8.74	10.8	8.75	10.8	9.01
Year 5	13.0	12.05	13.1	12.3	13.45	12.3	13.5	12.8	13.55	12.65	13.75	11.55	13.5	11.7
Year 10	14.2	14.2	14.25	14.25	14.65	14.65	14.7	14.7	15.0	15.0	15.3	15.3	15.9	15.9
Year 25	15.25	15.25	15.3	15.3	16.1	16.1	15.85	15.85	16.15	16.15	16.5	16.5	17.35	17.35
Year 50	15.7	15.7	15.8	15.8	16.35	16.35	16.4	16.4	16.8	16.8	17.15	17.15	18.15	18.15
Year 100	16.1	16.1	16.2	16.2	16.70	16.70	16.8	16.8	17.2	17.2	17.6	17.6	18.5	18.5
Year 200	16.3	16.3	16.4	16.4	16.90	16.90	17.05	17.05	17.5	17.5	17.9	17.9	18.85	18.85
Year 500	16.5	16.5	16.6	16.6	17.10	17.10	17.3	17.3	17.8	17.8	18.2	18.2	19.15	19.15

*Shaded areas are reaches and frequencies of flood event that show reduction in stages.

TABLE 2: Bayou Manchac Clearing and Snagging Project
Estimated Flood-Frequencies Under Without-Project And With-Project Conditions

Time Periods & Reaches	Number of Residential and Commercial Structures Inundated by Frequency							
Reaches/Structures/Frequency	0-2	2-5	5-10	10-25	25-50	50-100	100-500	Above 500
64 Sub-Basin Without Project	3	26	26	45	17	15	51	297
Cumulative without project[1]	3	29	55	100	117	132	183	480
With-project	0	11	44[2]	45	17	15	51	297
Cumulative, with-project[1]	0	11	55	100	117	132	183	480

[1]480 total structures in study area.

[2]18 structures appear to have shifted from the 2-5 frequency category to the 5-10 frequency category with-project.

which would cause additional flooding, with a longer duration of flooding in the watershed. Note that the with-project alternative would reduce damages to 18 structures flooded at the 2-5 year frequency rate. While damages to these 18 structures would be reduced, the non-structural alternative would not alleviate the problem of damages to vehicles, which appears to be a bigger problem than damages to structures in sub-area 64. Detailed economic analysis of this alternative was not performed because the initial review indicated that the project would not be cost effective.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, there would be an overall decrease in damages to structures along the bayou. Detail economic analysis of this alternative was not performed due to environmental issues related to this alternative, including impacts to fish and wildlife, water quality and other resources important to the human environment.

WETLANDS

Existing Conditions

This resource is institutionally significant because of: the Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968. Wetlands are technically significant because: they provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and nonconsumptive recreational opportunities. Wetlands are publicly significant because of the high value the public places on the functions and values that wetlands provide. There are wetlands on the edge of the bayou.

Wetlands in the study area are comprised predominantly of riparian forest. Riparian is a term used to describe an area adjacent to a stream or lake. This forested riparian zone provides important wildlife habitat and is essential for maintenance of warmwater stream productivity. Many small animals, including small mammals, reptiles, and amphibians are restricted to riparian habitat, and most large animals such as white-tailed deer require access to streams even though they spend most of their time in other habitats (Odum 1978). Because of the abundance of insects, the proximity to water, and the fact that riparian areas often provide the only woody cover within cleared and developed landscapes, forested riparian habitat provides important feeding and nesting areas for numerous songbirds. Trees provide shade, resulting in lower water temperatures and higher dissolved oxygen levels. Leaf litter is a principle source of organic input; fallen logs and branches provide instream cover, and riparian vegetation helps to minimize turbidity and excess nutrient inflow by filtering sediments in sheet flow. Riparian vegetation also aids in retaining floodwaters and preventing bank erosion. Depending on the timing and duration of flooding, overflow areas within the riparian zone and adjacent floodplain can provide

optimal fish spawning and nursery habitat. Forested wetlands in the study area consists mainly of areas vegetated with bottomland hardwoods. Tree species found in this habitat include live oaks, water oaks, baldcypress, black willow, sugarberry, red maple, and sycamore.

Future Conditions with No Action

Without implementation of the proposed action, no construction would occur in or around the wetlands. Riparian vegetation would continue to grow and add snags and other debris to the bayou. There would be no significant direct or indirect impacts to wetlands.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be no significant direct or indirect impacts to wetlands. Snags and debris located below the water surface would be removed. Trees above that elevation that are in imminent danger of falling into the channel would be removed (as described earlier in the general guidelines), but their stumps would be left in the bank. This action would minimize any potential for impacts to wetlands.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, homes and business would be moved or raised. Depending on the details of the plan developed there could be significant direct or indirect impacts to wetlands.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, a 20-foot wide band along one shoreline would have to be cleared. Approximately 24 acres would be affected. The use of heavy equipment would have direct significant impacts to the forested wetlands in the area.

FISHERIES

Existing Conditions

This resource is institutionally significant because of the Magnuson Fishery Conservation and Management Act of 1976, as amended and the Fish and Wildlife Coordination Act of 1958, as amended. Fisheries resources are technically significant because: they are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of various freshwater and marine habitats; and many species are important commercial resources. Fisheries resources are publicly significant because of the high priority that the public places on their esthetic, recreational, and commercial value.

Bayou Manchac is expected to provide low- to moderate-value habitat for some recreationally important fishes and shellfishes. Freshwater sport fishes present probably include

white crappie, bluegill, warmouth, channel catfish, and blue catfish. Other fishes likely present include yellow bullhead, freshwater drum, bowfin, car, buffaloes, striped mullet, gizzard shad, carp, and gar. Eutrophic conditions have been suggested as possible causes of fish kills in Bayou Manchac. A mussel survey of Bayou Manchac was conducted as part of this project. A total of four species of Unionid mussels (giant floater, bankclimber, round pearlshell, and southern mapleleaf) were collected from the bayou.

Future Conditions with No Action

Without implementation of the proposed action, fisheries habitat would be left undisturbed. There would be no significant direct or indirect impacts to the fisheries resources.

Future Conditions with the Proposed Action

With implementation of the proposed action, project impacts would include minimal reduction of streamside shading and instream cover. The amount of streamside clearing would not significantly alter the canopy; therefore, higher water temperatures and subsequent reduced dissolved oxygen levels would not result. These impacts would not result in a reduction of sport fish habitat values. There would be short-term minor impacts to sight-feeders, and filter feeders due to temporary turbidity increase when snags are pulled from the bottom. There would be no significant direct or indirect impacts to the fisheries resources.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, there should be no construction activity in the bayou. Therefore, there would be no significant direct or indirect impacts to the fisheries resources.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, project impacts would include the loss of streamside shading and instream cover. Those impacts would be expected to result in a reduction of sport fish habitat values, and depending upon the amount of streamside clearing, a possible further decline in water quality due to higher water temperatures and subsequently reduced dissolved oxygen levels. There would be long-term minor impacts to sight-feeders, and filter feeders due to turbidity increase caused by shoreline erosion until revegetation occurs.

WILDLIFE

Existing Conditions

This resource is institutionally significant because of the Fish and Wildlife Coordination Act of 1958, as amended and the Migratory Bird Treaty Act of 1918. Wildlife are technically

significant because: they are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources. Wildlife are publicly significant because of the high priority that the public places on their esthetic, recreational, and commercial value.

The forested portions of the study area provides habitat for a wide variety of migratory songbirds and raptors such as the yellow-billed cuckoo, Carolina chickadee, tufted titmouse, mockingbird, prothontary warbler, yellow-rumped warbler, red-shouldered hawk, Mississippi kite, great horned owl, and barred owl. Various waterfowl including mallards, wood ducks, and hooded mergansers also occur within portion of the study area. Additionally, belted kingfishers and wading birds such as herons and egrets forage on small fish along the bayou.

Amphibians expected to occur within the riparian zone include lesser siren, three-toed amphiuma, Gulf Coast toad, eastern narrow-mouth toad, Fowler's toad, green treefrog, cricket frog, bronze frog, and bullfrog. Reptiles likely found in the project area include red-eared turtle, painted turtle, Mississippi mud turtle, stinkpot, green anole, broad-headed skink, alligator, western ribbon snake, speckled kingsnake, western cottonmouth, and various water snakes.

Game mammals occurring in the project area include eastern cottontail, swamp rabbit, gray squirrel, and fox squirrel. Furbearers include nutria, striped skunk, raccoon, and mink. Other land mammals in the area include various species of bats, rodents, and the nine-banded armadillo.

Future Conditions with No Action

Without implementation of the proposed action, there would be no significant direct or indirect impacts to the wildlife resources.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be a minor short-term impact to wildlife during construction. Wildlife would avoid the construction area, but would return following construction. There would be no significant direct or indirect impacts to the wildlife resources.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, there would be no significant direct or indirect impacts to the fisheries resources.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, one shoreline would have to be cleared. Wildlife would avoid the construction area, and would return to the areas that still have forested wetlands following construction. Wildlife would return to the cleared area after revegetation occurred. There would be no direct significant impact to wildlife

resources. There would be indirect impacts to wildlife due to the removal of the forested wetland on one shoreline.

BOTTOMLAND HARDWOOD FOREST

Existing Conditions

This resource is institutionally significant because of Section 906 of the Water Resources Development Act of 1986 and the Fish and Wildlife Coordination Act of 1958, as amended. Bottomland hardwood forest is technically significant because: it provides necessary habitat for a variety of species of plants, fish, and wildlife; it often provides a variety of wetland functions and values; it is an important source of lumber and other commercial forest products; and it provides various consumptive and nonconsumptive recreational opportunities. Bottomland hardwood forest is publicly significant because of the high priority that the public places on its esthetic, recreational, and commercial value.

The bottomland hardwoods species found in this habitat include live oaks, water oaks, black willow, sugarberry, red maple, and sycamore.

Future Conditions with No Action

Without implementation of the proposed action, there would be no significant direct or indirect impacts to the bottomland hardwood forest.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be no significant direct or indirect impacts to the bottomland hardwood forest or hard mast producing trees.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, there would be no significant direct or indirect impacts to the bottomland hardwood forest.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, one shoreline would have to be cleared. The use of heavy equipment would have direct significant impacts to the bottomland hardwood forest in the area.

ESSENTIAL FISH HABITAT

Existing Conditions

This resource is institutionally significant because of the Magnuson-Stevens Act of 1996

(Public Law 104-297). Essential Fish Habitat (EFH) is technically significant because, as the Act states, EFH is "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." EFH is publicly significant because of the high value that the public places on the seafood and the recreational and commercial opportunities EFH provides.

Specific categories of EFH include all estuarine waters and substrates (mud, sand, shell, rock, and associated biological communities), including the sub-tidal vegetation (seagrasses and algae) and adjacent inter-tidal vegetation (marshes and mangroves). The Gulf of Mexico Fishery Management Council lists the following Federally managed species or species groups as being potentially found in coastal Louisiana (including Lake Pontchartrain): brown shrimp, white shrimp, pink shrimp, Gulf stone crab, red drum, gray snapper, Spanish mackerel. In addition, coastal wetlands provide nursery and foraging habitat that supports economically important marine fishery species such as spotted seatrout, summer flounder, Atlantic croaker, gulf menhaden, striped mullet, and blue crab. These species serve as prey for other Federally managed fish species such as mackerels, snappers, groupers, billfishes and sharks.

The only salinity zone in Bayou Manchac is the 0 to 0.5 ppt. There are no Federally managed species or species groups in Bayou Manchac. There would be no direct impacts to EFH by any of the alternatives examined.

The flow rate (cubic feet per second) in Bayou Manchac with and without the project would be unchanged. The drainage area of the Amite River is 2,200 square miles. The drainage area of Bayou Manchac is only 11.2 square miles. This constitutes only ½ of 1% (0.5%) of the total area of the Amite River Basin. Therefore, even under existing conditions Bayou Manchac has a minimal effect on the Amite River. The Amite River empties into Lake Maurepas which then empties into Lake Pontchartrain. There are no significant water related impacts due to any of the alternatives. There would be no indirect impacts to EFH by any of the alternatives examined.

ENDANGERED OR THREATENED SPECIES

Existing Conditions

This resource is institutionally significant because of: the Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940. Endangered (E) or threatened (T) species are technically significant because the status of such species provides an indication of the overall health of an ecosystem. These species are publicly significant because of the desire of the public to protect them and their habitats.

Twenty species are listed by the USFWS as being endangered or threatened in Louisiana. They are: Louisiana black bear (T), bald eagle (T), Alabama (inflated) heelsplitter mussel, West Indian manatee (E), pink mucket (pearlymussel) (E), Louisiana pearlshell (T), brown pelican (E), piping plover (T), Gulf sturgeon (T), pallid sturgeon (E), least tern, (E), gopher tortoise (T), loggerhead sea turtle (T), ringed map (sawback) turtle (T), black-capped vireo (E), red-cockaded

woodpecker (E), Geocarpon minimum (T), Louisiana quillwort (E), Pondberry (E), and American chaffseed (E). Four of these have been identified to be in the area. The bald eagle has been seen nesting in Alligator Bayou/Spanish Lake area adjacent to the upstream end of the project. The Alabama (inflated) heelsplitter mussel has been found in the Amite River the downstream end of the project. The Gulf sturgeon has been recognized to use the Amite River Basin. The West Indian manatee has been reported on a few occasions in the Amite River and Bayou Manchac.

The inflated heelsplitter was known historically from the Amite and Tangipahoa Rivers, Louisiana; the Pearl River, Mississippi; and the Tombigbee, Black Warrior, Alabama, and Coosa Rivers, Alabama. The presently known distribution is limited to the Amite River (between LA Hwy 37 and Hwy 42), Louisiana, and the Tombigbee and Black Warrior Rivers, Alabama. This species is not abundant within any known habitat. Exact population numbers are unknown. The preferred habitat of this species is soft, stable substrate in slow to moderate currents. It has been found in sand, mud, silt, and sandy-gravel, but not in large gravel or armored gravel. It is usually collected on the protected side of bars and may occur in depths over 20 feet. The major threats in the Amite River are gravel dredging and channel modification for flood control. Thirty percent of the range of this species in the Amite River had been lost since 1976, primarily due to gravel mining.

A Survey of Bayou Manchac for the inflated heelsplitter mussel was conducted on a series of days in late July and early August, 2000. No live or dead inflated heelsplitter mussels were collected in Bayou Manchac.

Future Conditions with No Action

Without implementation of the proposed action, the flow rate and velocity leaving Bayou Manchac would be unchanged. Also there would be no increase in noise levels and human activity to disturb wildlife. Therefore, the no action alternative would not significantly affect listed or proposed threatened or endangered species.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be a short-term minor impact to the feeding habitat of the bald eagle during construction. Bald eagles would avoid the area during construction, but would return soon after work concluded. There are plenty of alternate feeding habitats in the bald eagle's range so this minor impact would not significantly affect them.

The flow rate (cubic feet per second) in Bayou Manchac with and without the project would be unchanged. However, there would be a slight increase in velocity (feet per second) entering the Amite River from Bayou Manchac as a result of the clearing and snagging efforts. However, given the volume of water in the Amite, the contribution from Bayou Manchac would have a minimal effect on the flow regime of the Amite River. The drainage area of the Amite River is 2,200 square miles, which includes portions of eight parishes in Louisiana and four counties in Mississippi. The drainage area of Bayou Manchac is only 11.2 square miles. This

constitutes only ½ of 1% (0.5%) of the total area of the Amite River Basin. Therefore, even under existing conditions Bayou Manchac has a minimal effect on the Amite River. Because only a slight increase in velocity is expected as a result of clearing and snagging, Bayou Manchac under with-project conditions has a minimal effect on the Amite River regime. This is true with regard to flow in the Amite, velocity in the Amite, and rate of sedimentation in the Amite. The inflated heelsplitter mussel is found primarily on the protected side of sandbars (point bars). With-project conditions would not affect the point bars in the Amite River because Bayou Manchac is only a small fraction of the drainage "input" into the Amite River.

The Gulf sturgeon is not going to utilize Bayou Manchac for breeding due to existing poor water quality. The adult sturgeons would avoid the construction area, but would return following construction.

The likelihood of encountering a West Indian manatee during construction is very slight. If this encounter does occur, there could be an adverse impact. Therefore, a monitoring program for manatees is recommended during the project implementation. This monitoring would consist of having an observer present during the clearing and snagging process. In the event that a manatee is spotted, work would be halted until the manatee leaves the area. The U.S. Fish and Wildlife Office would be notified of any sightings. Therefore, The proposed activities would not adversely affect listed or proposed threatened or endangered species.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, the flow rate and velocity leaving Bayou Manchac would be unchanged. Therefore, the no action alternative would not adversely affect listed or proposed threatened or endangered species.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, the impacts to listed or proposed threatened or endangered species would be similar but greater then those for the proposed alternative. There would be a greater impact on the feeding area of the bald eagle since one shoreline would have to be cleared. There would also be an increased sedimentation rate due to erosion on that exposed shoreline. This increase in sedimentation could bury/smother juvenile heelsplitter mussels in the Amite River. This alternative would have a minor adverse affect on listed or proposed threatened or endangered species.

CULTURAL RESOURCES

Existing Conditions

This resource is institutionally significant because of the National Historic Preservation Act of 1966, as amended, and the Archeological Resources Protection Act (ARPA) of 1979, as well as other statutes. It is publicly significant because preservation groups and others support protection and enhancement of historic resources. Cultural resources are technically significant

for their association or linkage to past events, historically important persons, design and/or construction values, and for their ability to yield important information about prehistory and history.

The portion of Bayou Manchac in the project area forms a boundary between Ascension and East Baton Rouge Parishes, and also bounds on Livingston and Iberville Parishes. The history of Ascension Parish can be considered typical for the project area. The first settlers came from Nova Scotia in 1763, and Ascension Parish was created in 1807. Ascension Parish has been a farming parish and has had large sugarcane and cotton farms and plantations. Today, sugarcane is the primary crop, with vegetables and soybeans also being important. The parish has undergone considerable industrial growth in the latter part of the 20th century. The mild climate, availability of water transportation, abundance of surface water, and ample supply of natural resources has attracted petrochemical and basic metal industrial plants.

East Baton Rouge Parish was established in 1811, and since then the deep water harbor of Baton Rouge has helped it become an important industrial center (Dance et al. 1968). Livingston Parish was settled by French, Spanish, and English settlers during the 18th century, and was established as a political unit in 1832 (McDaniel 1991). Farming was and is a major factor in the economy of the parish, but large farms have replaced the earlier small subsistence farms. Iberville Parish is named for the French Count d'Iberville (Spicer et al. 1977). The parish was named one of the original 19 divisions of Louisiana in 1807. Since the late 19th century, an increasing amount of land has been drained and opened to cultivation. The construction of waterways has facilitated industrial development.

Historically, Bayou Manchac was an important avenue of navigation. This was particularly true during the time the British controlled West Florida. During this period, the bayou served as part of an important short cut between the upper Mississippi region and the Mobile area by allowing the bypass of Spanish controlled New Orleans. The short cut was from Lake Pontchartrain to Lake Maurepas, to the Amite River and up Bayou Manchac to the Mississippi River. Unfortunately, due to low water level in Bayou Manchac (the draw in the river was roughly 3-4 feet, allowing the passage of only relatively small vessels and barges) the last 10 miles of the journey were often impassible. Therefore, a portage road was used along this segment of the river during most of the year. Several historic town sites were located along Bayou Manchac, including two Indian town sites (Tageulasay and Anatamaha) and the Spanish colonial town of Galveztown

There have been several previous archaeological surveys in area. Included among these surveys are both terrestrial and marine focussed studies. These studies include a survey of submerged cultural resources by A.R. Saltus (1986) of the Maurepas Basin which included portions of Bayou Manchac; David Kelley's 1986 cultural resources survey of Recreation Lake, for Coastal Environments, Inc.; and Heartfield, Price and Greene's cultural resources investigations of the United Gas Pipeline Replacement (1985). Other studies include a cursory cultural resources study by Dick Marshall in 1976 of an 85 acre tract of land; a 1981 pipeline survey by William G. McIntire of Dames and Moore (1981); a cultural resources survey of CRS of a proposed pipeline from Weeks Island to the Mississippi border (1981); and a survey of

Galveztown conducted by Helen O'Brien (1981).

Results of these surveys and additional background research indicate that archaeologically, the area in and around Bayou Manchac is very rich. Within the proposed project corridor, there are ten recorded archaeological sites (Table 1). The sites include both prehistoric and historic occupations. Significant sites include the Kleinpeter Mounds, the Hillman Cemetery (a possible Indian town site), and Galveztown.

Site Number	Project Impact	Cultural Affiliation	NRHP Eligibility	Level of study	Comments	Report Reference
16AN9	None	Unknown prehistoric	Unknown	Survey		CEI 1987 22-1188
16AN11	None	Unknown prehistoric	Unknown	Survey		CEI 1987 22-1188
16AN23	None	Plaquemine	Ineligible	Survey	3 sherds	HP&G 1985
16AN37	None	19th Century Historic	Unknown	Survey	Yarbourough Sugar House	Saltus, A.R.; 22-1153
16AN39	None	18th-19th Century Historic	Potentially Eligible	Recon	Spanish Colonial Galveztown	Goodwin 1990
16EBR5	None	Tchf-Historic	Eligible	Testing	Kleinpeter Mounds	Jones & Shumam 1986; 22-1171
16EBR36	None	Marksville	Unknown	Recon		Rivet & Weinstein 1977
16EBR60	None	Protohistoric -Historic	Unknown	Survey	Hillman Cemetery/ Possible contact period Indian village site	Saltus 1985
16EBR61	Unknown	Historic	Unknown	Survey	Sawmill Site	Saltus 1985

Table 1. Known archaeological sites along Bayou Manchac project area.

Future Conditions with No Action

Without implementation of the proposed action, there would be no effect on any cultural resources.

Future Conditions with the Proposed Action

With implementation of the proposed action, there is little potential for ground disturbing activities in the shoreline adjacent to Bayou Manchac. However, a number of sensitive

archaeological sites are located adjacent to the survey area. In addition, the possibility exists that river craft of the prehistoric or historic periods could be encountered during the clearing and snagging process. Therefore, a monitoring program is recommended during the project implementation. This monitoring would consist of having a qualified archaeologist present during the clearing and snagging process. The purpose of the monitoring is to assure that no previously known or unknown archaeological sites are impacted during the implementation of this project. In the event that significant cultural resources are encountered, work in the location of the site would be halted. Any resources encountered would be recorded and documented. Coordination would be maintained by U.S. Army Corps of Engineers, NOD staff archaeologists and the Louisiana State Historic Preservation Office (SHPO).

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, there would be no effect on any cultural resources.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, there is little potential for ground disturbing activities in the shoreline adjacent to Bayou Manchac. However, a number of sensitive archaeological sites are located adjacent to the survey area. In addition, the possibility exists that river craft of the prehistoric or historic periods could be encountered during the clearing and snagging process. Therefore, a monitoring program is recommended during the project implementation. This monitoring would consist of having a qualified archaeologist present during the clearing and snagging process. The purpose of the monitoring is to assure that no previously known or unknown archaeological sites are impacted during the implementation of this project. In the event that significant cultural resources are encountered, work in the location of the site would be halted. Any resources encountered would be recorded and documented. Coordination would be maintained by U.S. Army Corps of Engineers, NOD staff archaeologists and the Louisiana State Historic Preservation Office (SHPO).

RECREATIONAL RESOURCES

Existing Conditions

This resource is institutionally significant because of the Federal Water Project Recreation Act of 1965, as amended, and the Land and Water Conservation Fund Act of 1965, as amended. Recreational resources are technically significant because of the high economic value of recreational activities and their contribution to local, state, and national economies. Recreational resources are publicly significant because of: the high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.

The natural and recreational resources of the project area provide the potential for wide and varied opportunities for outdoor enjoyment. Recreational activities taking place in Bayou

Manchac include motorized and non-motorized boating where possible, hunting and minimal fishing. Along Bayou Manchac, many camps with fishing piers are present. The Bayou is generally over grown with vegetation and fallen trees. At times, the water has a fowl odor, and in places, the Bayou is strewn with modern trash and debris.

A commercial swamp tour operates in the vicinity of the western portion of Bayou Manchac (out of the project area) taking people into Alligator Bayou and the Spanish Lake Basin. The Basin, includes the Bluff Swamp Wildlife Refuge and Botanical Gardens. This 901 acre refuge is abundant with giant old-growth cypress trees and various wildlife species. The area is rich in environmental beauty and ecological habitat. The basin's swamp tour offers opportunities for wildlife photography, environmental study and wetland ecology interpretation. Recreational sport fishing is by far the most popular activity in the basin, due to the presence of resources such as Spanish Lake and numerous bayous in the vicinity. Small game hunting is also popular in the area due to the abundance of a diverse habitat and a wide range of species available to the hunter.

Future Conditions with No Action

Without implementation of the proposed action, a tree and brush covered Bayou Manchac would continue to experience minimal recreational use as it does at present. Poor water quality, trash, and debris would continue to constrict the Bayou, decreasing the recreational experience in the future. Camps and fishing piers lining the banks would continue to have inadequate user access into the Bayou. Recreational value of the Bayou would decrease with time.

Future Conditions with the Proposed Action

With implementation of the proposed action, the recreational environment in Bayou Manchac would experience limited short-term disruption imposed by clearing and snagging activities. These activities would temporarily disrupt and relocate any recreational boat use occurring within the Bayou. However, upon completion of work, the Bayou should experience rejuvenation in recreational use providing a clear channel, and hopefully improved water flow conditions conducive to quality recreational pursuits.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, a tree and brush covered Bayou Manchac would continue to experience minimal recreational use as it does at present. Poor water quality, trash, and debris would continue to constrict the Bayou, decreasing the recreational experience in the future. Camps and fishing piers lining the banks would continue to have inadequate user access into the Bayou. Recreational value of the Bayou would decrease with time.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, the recreational

environment in Bayou Manchac would experience limited short-term disruption imposed by clearing and snagging activities. These activities would temporarily disrupt and relocate any recreational boat use occurring within the Bayou. However, upon completion of work, the Bayou should experience rejuvenation in recreational use providing a clear channel, and hopefully improved water flow conditions conducive to quality recreational pursuits.

AIR QUALITY

Existing Conditions

This resource is considered institutionally significant because of the Louisiana Environmental Quality Act of 1983, as amended, and the Clean Air Act of 1963, as amended. Air Quality is technically significant because of the status of regional ambient air quality in relation to the National Ambient Air Quality Standards (NAAQS). It is publicly significant because of the desire for clean air expressed by virtually all citizens.

East Baton Rouge and Ascension Parishes are currently classified in "serious non-attainment" for ozone and is in attainment of all other NAAQS (http://www.epa.gov/oar/oaqps/greenbk/aycl.html#LOUISIANA and http://www.deq.state.la.us/evaluation/ozone/statuso3.htm). This classification is the result of area-wide air quality modeling studies. Categories of emissions of concern are nitrous oxides (NOx) and volatile organic compounds (VOC's). A waiver of the NOx requirement is in effect for East Baton Rouge Parish, however. This eliminates the requirement for specific quantification of those emissions.

Future Conditions with No Action

Without implementation of the proposed action, there would be no impact on the air quality of the area. It is quite likely that the "serious non-attainment" status would persist.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be minor short-term impacts to air quality would result from the construction phase of the proposed action. The air quality impacts would be limited to those produced by heavy equipment. Ambient air quality would be temporarily degraded, but emission controls and limited duration would aid in minimizing the effects. No long-term significant impacts to the local air quality would be anticipated. Emissions attributable to the proposed action would result in no significant impact to air quality in the parishes.

Future Conditions with the Non-structural alternatives

With implementation of the non-structural alternatives, there would be minor short-term impacts to air quality would result from the construction phase of the proposed action. The air quality impacts would be limited to those produced by heavy equipment. Ambient air quality

would be temporarily degraded, but emission controls and limited duration would aid in minimizing the effects. No long-term significant impacts to the local air quality would be anticipated. Emissions attributable to the proposed action would result in no significant impact to air quality in the parishes.

Future Conditions with the Clearing and snagging by a dragline

With implementation of the clearing and snagging by a dragline, there would be minor short-term impacts to air quality would result from the construction phase of the proposed action. The air quality impacts would be limited to those produced by heavy equipment. Ambient air quality would be temporarily degraded, but emission controls and limited duration would aid in minimizing the effects. No long-term significant impacts to the local air quality would be anticipated. Emissions attributable to the proposed action would result in no significant impact to air quality in the parishes.

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) STUDIES

The NOD is obligated under Engineer Regulation 1165-2-132 to assume responsibility for the reasonable identification and evaluation of all Hazardous and Toxic Radioactive Waste (HTRW) contamination within the vicinity of the proposed action. A HTRW Land Use History and a Phase I HTRW Initial Site Assessment (ISA) have been completed for the proposed action and are on file in the NOD. The risk of encountering HTRW for the proposed action is low, based on the ISA.

CUMULATIVE IMPACTS

The USACE, New Orleans District has two flood protection studies in the area, the Amite River and Tributaries Reconnaissance Study, and East Baton Rouge (EBR) Parish, LA Feasibility Study. The proposed action would not significantly impact these ongoing cumulative impacts associated with flood protection. Three environmental restoration studies are currently ongoing in the area. The New River Ecosystem Restoration Feasibility Study, the Bayou Braud, Spanish, Lake, and Alligator Bayou, LA Ecosystem Restoration study, and Amite River Ecosystem Restoration Reconnaissance Study. The proposed action would not significantly impact these ongoing positive cumulative impacts associated with ecosystem restoration. Much of the shoreline of Bayou Manchac has been cleared for development. This loss of habitat has directly reduced populations of fish and wildlife and reduced water quality. The proposed action would not significantly increase these past cumulative impacts associated with the clearing for development on Bayou Manchac or Eat Baton Rouge and Ascension Parishes.

COORDINATION

Preparation of this EA and a draft Finding of No Significant Impact (FONSI) has been coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. The following agencies, as well as other

interested parties, are receiving copies of this EA and draft FONSI:

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Marine Fisheries Service
U.S. Natural Resources Conservation Service, State Conservationist
Advisory Council on Historic Preservation
Governor's Executive Assistant for Coastal Activities
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources, Coastal Management Division
Louisiana Department of Natural Resources, Coastal Restoration Division
Louisiana Department of Environmental Quality
Louisiana State Historic Preservation Officer

MITIGATION

Mitigation measures are used to avoid, minimize, or compensate for adverse impacts to environmental resources. The appropriate application of mitigation is to formulate a project that first avoids adverse impacts, then minimizes adverse impacts, and lastly, compensates for unavoidable impacts. No impacts have been identified that would require compensatory mitigation. No wildlife mitigation would be required. To reduce fisheries related impacts all clearing and snagging would adhere to the Stream Obstruction and Removal Guidelines (1983). Specific snag and tree cutting guidelines will be followed. Air quality and noise impacts can be reduced by utilizing heavy machinery fitted with approved muffling devices that reduce noise, vibration, and emissions. A cultural resources monitoring program is recommended during the project implementation. This monitoring would consist of having a qualified archaeologist present during the clearing and snagging process. The purpose of the monitoring is to assure that no previously known or unknown archaeological sites are impacted during the implementation of this project. A monitoring program for manatees is recommended during the project implementation if construction occurs between June 1 and September 30. This monitoring would consist of having an observer present during the clearing and snagging process. The cultural resource and manatee monitoring programs would be combined into one observer.

COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved upon: coordination of this EA and draft Finding of No Significant Impacts (FONSI) with appropriate agencies, organizations, and individuals for their review and; U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) confirmation that the proposed action would not be likely to adversely affect and endangered or threatened species; Louisiana Department of Natural Resources concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program; receipt of the Louisiana State Historic Preservation Officer Determination of No Affect on cultural resources; receipt and acceptance or resolution of all USFWS Fish and Wildlife Coordination Act

recommendations; receipt and acceptance or resolution of all Louisiana Department of Environmental Quality comments on the air quality impact analysis documented in the EA; and receipt and acceptance or resolution of all NMFS Essential Fish Habitat recommendations. The draft FONSI would not be signed until the proposed action achieves environmental compliance with applicable laws and regulations, as described above. Coordination with the Louisiana Office of Cultural Development, State Historic Preservation Officer (SHPO) was begun on January 26, 2000. Comments received from the SHPO would be addressed in accordance with procedures provided in Section 106 of the National Historic Preservation Act (see CFR Part 800 "Protection of Historic Properties").

CONCLUSION

The proposed action consists of the clearing and snagging Bayou Manchac from the mouth to Alligator Bayou (approximately 10 miles). This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no impact upon cultural resources and no significant impact on Bayou Manchac, socioeconomic, wetlands, fisheries, wildlife, bottomland hardwood forest, essential fish habitat, recreation, air quality, and no adverse impact to endangered or threatened species.

PREPARED BY

EA # 304 and the associated draft FONSI were prepared by Mr. Nathan Dayan, Fishery Biologist, with relevant sections prepared by Mr. Mike Salyer, Wildlife Biologist - HTRW, Joseph Giliberti, Archeologist - Cultural Resources, Mr. Steve Finnegan, Landscape Architect - Recreational Resources, Ms. Stacey Frost, Hydraulic Engineer - Water Flow input, Mr. Robert Lacy and Mr. Brian Maestri, Economist – Socio-Economics, Mr. Robert Martinson, Biologist - review of EA, Mr. David Beck, Engineer – construction description, and Ms. Julie LeBlanc, Engineer - Project Manager. The address of the preparers is: U.S. Army Corps of Engineers, New Orleans District; Planning, Programs, and Project Management Division, CEMVN-PM; P.O. Box 60267; New Orleans, Louisiana 70160-0267.

McConnell, Chester (chairman of Stream Renovation Guidelines Committee). 1983. Stream Obstruction and Removal Guildlines. The Wildlife Society and American Fisheries Society. pp 9.

Steimle & Associates, Inc. August 2000. Bayou Manchac Section 208 Clearing and Snagging Project Inflated Heelsplitter (*Potamilus inflatus*) Mussel Survey, Contracted Report for USACE, New Orleans District. pp 13.